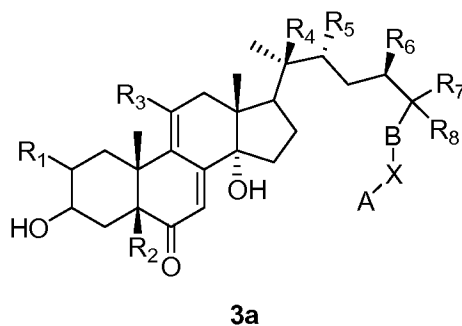
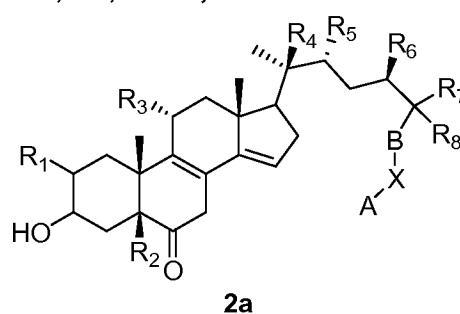
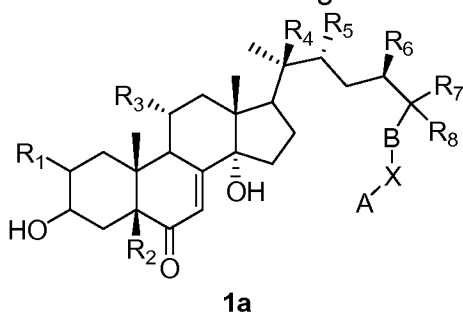


Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) An ecdysteroid derivative wherein a fluorescent moiety is attached to an ecdysteroid moiety by derivatisation of a hydroxyl group on ~~the an~~ alkyl side chain of the ecdysteroid moiety, wherein the derivative is ~~capable of binding~~ binds to an ecdysone receptor or ligand binding domain ~~thereof~~ of an ecdysone receptor.
2. (Currently Amended) ~~An~~ The ecdysteroid derivative according to claim 1 wherein the derivative has general structure **1a**, **2a**, or **3a**;



wherein B is CH₂O, CH₂S, CH₂NH, O, S, or NH; X is a linking group; A is a fluorescent moiety; R¹-R⁵ are independently selected from H, alkyl, haloalkyl, OH, or halogen, R⁷-R⁸ are independently selected from H, alkyl, haloalkyl, OH, or halogen or R⁷ and R⁸ together are =CH₂; R⁶ is selected from H, OH, alkyl,

=CH₂ or halogen, or R⁶ together with R⁷ is a double bond.

3. (Currently Amended) ~~A~~The derivative according to claim 2 wherein the alkyl groups are C1 to C20, more preferably, for R¹ and R² the alkyl group is C1 to C5.

4. (Currently Amended) ~~A~~The derivative according to claim 2 wherein R¹, and R⁵ are OH; R² is H or OH; R³ is H; R⁴ is H or OH; R⁶ is selected from H, OH, CH₃, CH₃CH₂, or (CH₃)₂CH; R⁷ and R⁸ are independently selected from H, OH, CH₃, or R⁷ and R⁸ together can be =CH₂, R⁶ together with R⁷ can be a double bond.

5. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 2 to 4~~claim 2 wherein X is selected from the group consisting of C(O)NH, C(S)NH, SO₂ and C(O).

6. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 2 to 5~~claim 2 wherein B is CH₂O or O.

7. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 2 to 6~~claim 2 wherein the fluorescent moiety is selected from the group consisting of unsubstituted and substituted fluorescein moieties, unsubstituted and substituted dansyl moieties, and unsubstituted and substituted coumarin moieties.

8. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 2 to 7~~claim 2 wherein the derivative is of general structure 1a wherein R¹ and R⁵ are OH, R³ is H, R⁷ is CH₃, and B is CH₂O and X is selected from the group consisting of C(O)NH, C(S)NH, SO₂ and C(O).

9. (Currently Amended) ~~A~~The derivative according to claim 8 wherein R², R⁴, and R⁸ are independently selected from H, alkyl, OH, or halogen; R⁶ is selected from H, OH, alkyl, =CH₂ or halogen.

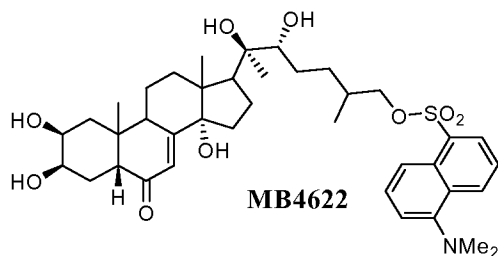
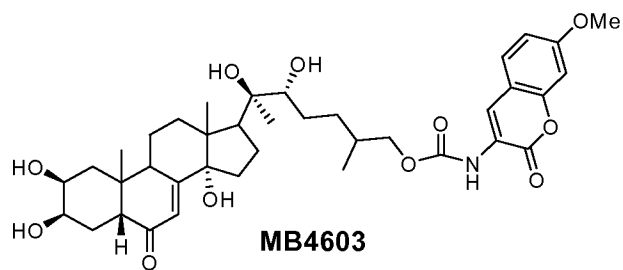
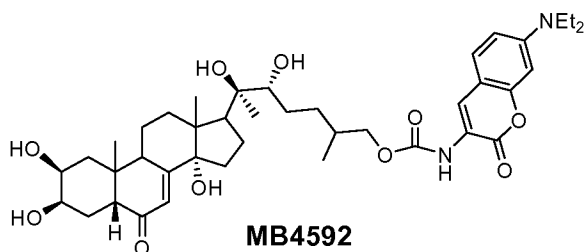
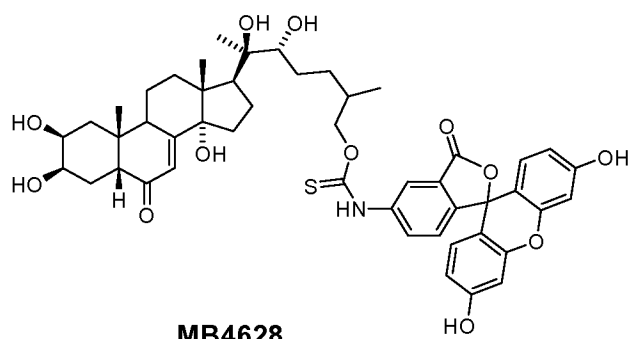
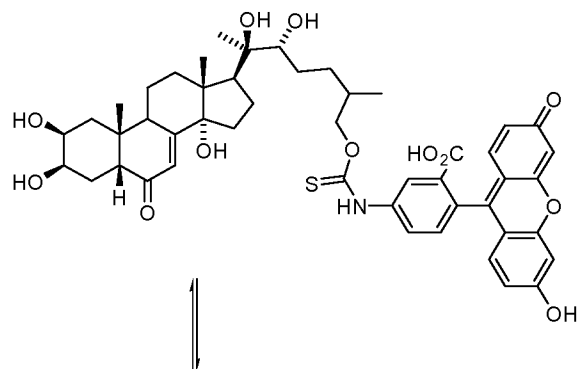
10. (Currently Amended) ~~A~~The derivative according to claim 9 wherein R² is H, R⁴ is OH, R⁶ is H and R⁸ is H.

11. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 2 to 7~~claim 2 wherein R¹, R⁴ and R⁵ are OH, R² is H or OH, R³ is H, R⁶ is H or CH₃, and R⁷ and R⁸ are H or CH₃.

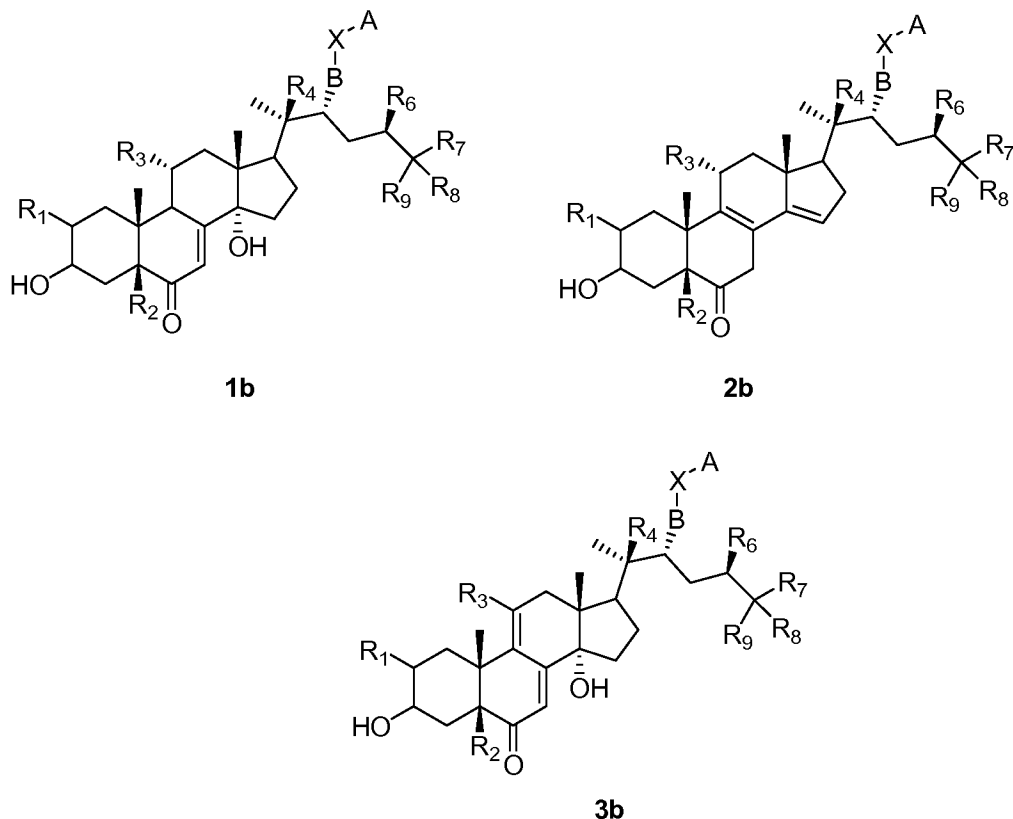
12. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 4 to 11~~claim 2 wherein the ecdysteroid moiety is selected from the group consisting of inokosterone, 26-hydroxyecdysone, 20,26-dihydroxyecdysone, makisterone B, amarasterone A, amarasterone B, ajugasterone B, sidasterone A, sidasterone B, 26-hydroxy-polypodine B, 20-hydroxyecdysone, makisterone A, polypodine B

and rapisterone D.

13. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 1 to 12~~claim 1 wherein the derivative is selected from the group consisting of:



14. (Currently Amended) ~~A~~The ecdysteroid derivative according to claim 1 wherein the derivative has general structure **1b**, **2b**, or **3b**;



wherein B is CH₂O, CH₂S, CH₂NH, O, S, or NH; X is a linking group; A is a fluorescent moiety; R¹-R⁴, R⁷-R⁹ are independently selected from H, alkyl, haloalkyl, OH, or halogen; R⁶ is selected from H, OH, alkyl, =CH₂ or halogen.

15. (Currently Amended) ~~A~~The derivative according to claim 14 wherein the alkyl groups are C1 to C20, more preferably, for R¹ and R² the alkyl group is C1 to C5.

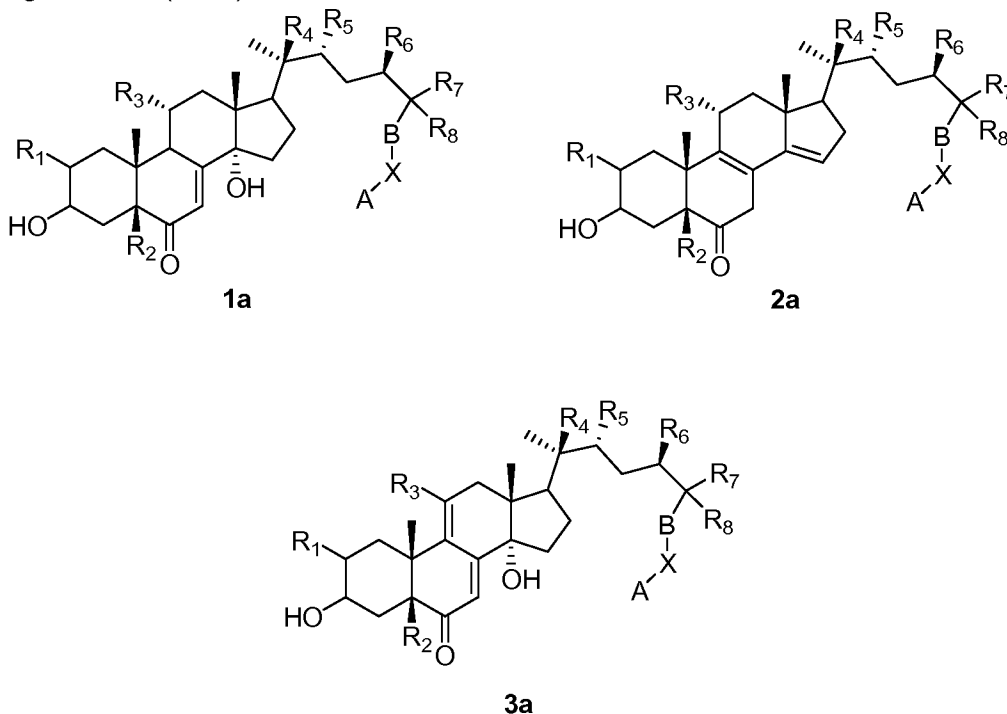
16. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 14 to 15~~ claim 14 wherein X is selected from the group consisting of C(O)NH, C(S)NH, SO₂, and C(O).

17. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 14 to 16~~ claim 14 wherein the fluorescent moiety is selected from the group consisting of unsubstituted and substituted fluorescein moieties, unsubstituted and substituted dansyl moieties, and unsubstituted and substituted coumarin moieties.

18. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 14 to 17~~ claim 14 wherein R^1 and R^4 are OH; R^2 and R^3 are independently selected from H or OH; R^6 is selected from H or CH_3 , and R^7 , R^8 and R^9 are independently selected from the group H, OH, CH_3 , F, and I.

19. (Currently Amended) ~~A~~The derivative according to ~~any one of claims 14 to 18~~ claim 14 wherein the ecdysteroid moiety is selected from the group consisting of ponasterone A, 20-hydroxyecdysone, muristerone A, makisterone A, polypodine B, rapisterone D, $2\beta,3\beta,20R,22R$ -tetrahydroxy-25-fluoro- 5β -cholest-8,14-dien-6-one, 5-deoxykaladasterone, 26-iodoponasterone A, and 25-fluoroponasterone A.

20. A compound selected from the group of compounds consisting of general structures **1a**, **2a**, and **3a** which interact with an ecdysone receptor or ligand binding domain (LBD) thereof;



wherein B is CH_2O , CH_2S , CH_2NH , O, S, or NH; X is a linking group; A is a fluorescent moiety; R^1 - R^5 are independently selected from H, alkyl, haloalkyl, OH, or halogen, R^7 - R^8 are independently selected from H, alkyl, haloalkyl, OH, or halogen or R^7 and R^8 together are $=CH_2$; R^6 is selected from H, OH, alkyl, $=CH_2$ or halogen, or R^6 together with R^7 is a double bond.

21. (Currently Amended) ~~A~~The compound according to claim 20 wherein the alkyl groups are C1 to C20, more preferably, for R^1 and R^2 the alkyl group is C1

to C5.

22. (Currently Amended) ~~A~~The compound according to claim 20 ~~or 21~~ wherein R^1 , and R^5 are OH; R^2 is H or OH; R^3 is H; R^4 is H or OH; R^6 is selected from H, OH, CH_3 , CH_3CH_2 , or $(CH_3)_2CH$; R^7 and R^8 are independently selected from H, OH, CH_3 , or R^7 and R^8 together can be $=CH_2$, R^6 together with R^7 can be a double bond.

23. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 22~~ claim 20 wherein X is selected from the group consisting of C(O)NH, C(S)NH, SO_2 and C(O).

24. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 23~~ claim 20 wherein B is CH_2O or O.

25. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 24~~ claim 20 wherein the fluorescent moiety is selected from the group consisting of unsubstituted and substituted fluorescein moieties, unsubstituted and substituted dansyl moieties, and unsubstituted and substituted coumarin moieties..

26. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 25~~ claim 20 wherein the compound is of general structure 1a wherein R^1 and R^5 are OH, R^3 is H, R^7 is CH_3 , and B is CH_2O and X is selected from the group consisting of C(O)NH, C(S)NH, SO_2 and C(O).

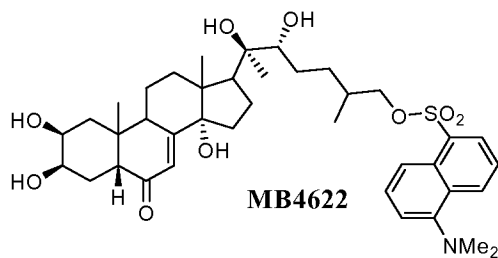
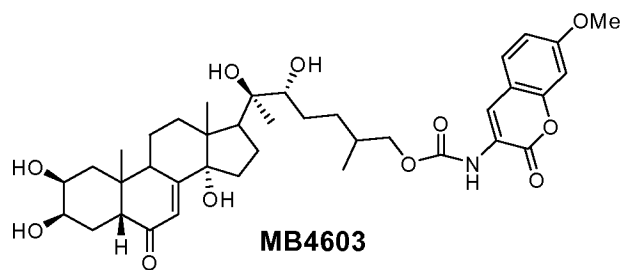
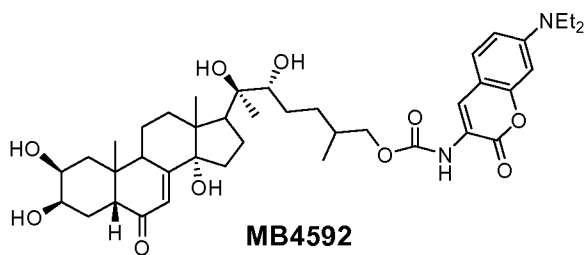
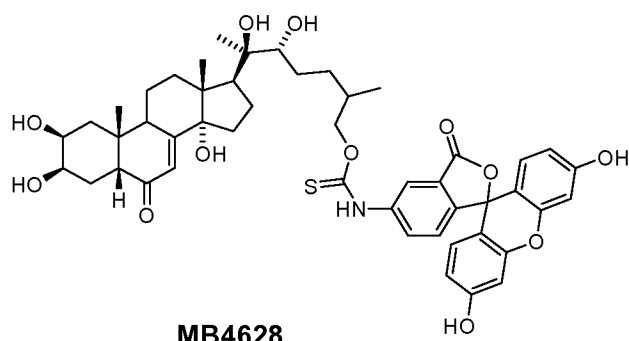
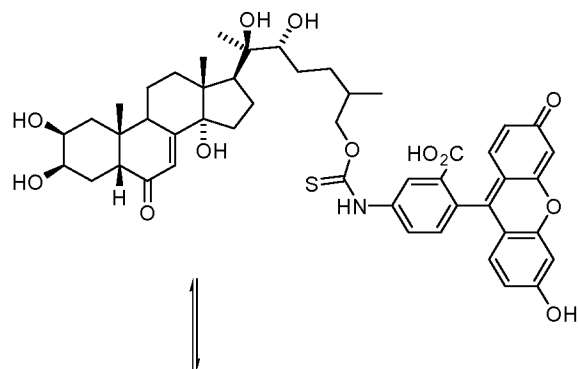
27. (Currently Amended) ~~A~~The compound according to claim 26 wherein R^2 , R^4 , and R^8 are independently selected from H, alkyl, OH, or halogen; R^6 is selected from H, OH, alkyl, $=CH_2$ or halogen.

28. (Currently Amended) ~~A~~The compound according to claim 27 wherein R^2 is H, R^4 is OH, R^6 is H and R^8 is H.

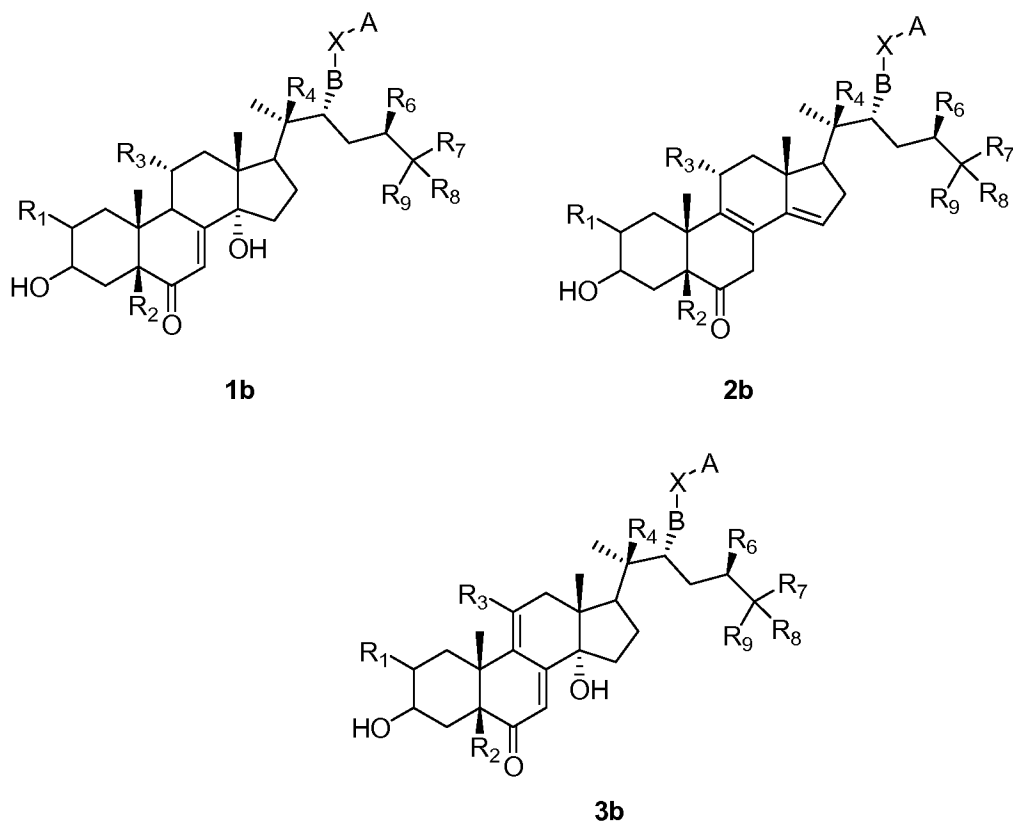
29. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 28~~ claim 20 wherein R^1 , R^4 and R^5 are OH, R^2 is H or OH, R^3 is H, R^6 is H or CH_3 , and R^7 and R^8 are CH_3 .

30. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 29~~ claim 20 wherein ~~the a~~ fluorescent moiety is attached by derivatisation to an ecdysteroid selected from the group consisting of inokosterone, 26-hydroxyecdysone, 20,26-dihydroxyecdysone, makisterone B, amarasterone A, amarasterone B, ajugasterone B, sidasterone A, sidasterone B, 26-hydroxy-polypodine B, 20-hydroxyecdysone, makisterone A, polypodine B and rapisterone D.

31. (Currently Amended) ~~A~~The compound according to ~~any one of claims 20 to 30~~ claim 20 wherein the compound is selected from the group consisting of:



32. A compound selected from the group of compounds consisting of general structures **1b**, **2b**, and **3b** which interact with an ecdysone receptor or ligand binding domain (LBD) thereof;



wherein B is CH₂O, CH₂S, CH₂NH, O, S, or NH; X is a linking group; A is a fluorescent moiety; R¹-R⁴, R⁷-R⁹ are independently selected from H, alkyl, haloalkyl, OH, or halogen; R⁶ is selected from H, OH, alkyl, =CH₂ or halogen.

33. (Currently Amended) ~~A~~The compound according to claim 32 wherein the alkyl groups are C1 to C20, more preferably, for R¹ and R² the alkyl group is C1 to C5.

34. (Currently Amended) ~~A~~The compound according to ~~any one of claims 32 to 33~~ claim 32 wherein X is selected from the group consisting of C(O)NH, C(S)NH, SO₂, and C(O).

35. (Currently Amended) ~~A~~The compound according to ~~any one of claims 32 to 34~~ claim 32 wherein the fluorescent moiety is selected from the group consisting of unsubstituted and substituted fluorescein moieties, unsubstituted and substituted dansyl moieties, and unsubstituted and substituted coumarin moieties.

36. (Currently Amended) ~~A~~The compound according to ~~any one of claims 32 to 35~~ claim 32 wherein R¹ and R⁴ are OH; R² and R³ are independently selected from H or OH; R⁶ is selected from H or CH₃, and R⁷, R⁸ and R⁹ are independently selected from the group H, OH, CH₃, F, and I.

37. (Currently Amended) ~~A~~The compound according to ~~any one of claims 32 to 36~~ claim 32 wherein the fluorescent moiety is attached by derivatisation to an ecdysteroid is selected from the group consisting of ponasterone A, 20-hydroxyecdysone, muristerone A, makisterone A, polypodine B, rapisterone D, 2 β ,3 β ,20*R*,22*R*-tetrahydroxy-25-fluoro-5 β -cholest-8,14-dien-6-one, 5-deoxykaladasterone, 26-iodoponasterone A, and 25-fluoroponasterone A.

38. A compound which is an ecdysteroid mimic wherein the compound comprises a non-ecdysteroid moiety that interacts with an ecdysone receptor or ligand binding domain thereof, and wherein the compound further comprises a fluorescent moiety.

39. (Currently Amended) ~~A~~The compound according to claim 38 wherein the compound comprises a substituted or unsubstituted dibenzoyl hydrazine moiety that interacts with an ecdysone receptor or ligand binding domain thereof, and wherein the compound further comprises a fluorescent moiety attached through a phenyl ring substituent or a nitrogen atom in the dibenzoyl hydrazine moiety.

40. (Currently Amended) A method for screening a candidate compound for its ability to interact with an ecdysone receptor or ligand binding domain (LBD) thereof in a competitive inhibition format, the method comprising the steps of:

(a) incubating with an ecdysone receptor or LBD thereof, a candidate compound and the derivative according to ~~any one of claims 1 to 19~~ claim 1; and

(b) measuring the extent of binding of the derivative according to ~~any one of claims 1 to 19~~ claim 1 to the ecdysone receptor or LBD thereof.

41. (Currently Amended) A method for screening a candidate compound for its ability to interact with an ecdysone receptor or ligand binding domain (LBD) thereof in a competitive inhibition format, the method comprising the steps of:

(a) incubating with an ecdysone receptor or LBD thereof, a candidate compound and the compound according to ~~any one of claims 20 to 37~~ claim 20; and

(b) measuring the extent of binding of the compound according to ~~any one of claims 20 to 37~~ claim 20 to the ecdysone receptor or LBD thereof.

42. (Currently Amended) A method for screening a candidate compound for its ability to interact with an ecdysone receptor or ligand binding domain (LBD) thereof in a competitive inhibition format, the method comprising the steps of:

(a) incubating with an ecdysone receptor or LBD thereof, a candidate compound and the derivative according to ~~any one of claims 38 or 39~~claim 38; and

(b) measuring the extent of binding of the derivative according to ~~any one of claims 38 or 39~~claim 38 to the ecdysone receptor or LBD thereof.

43. (Currently Amended) ~~A~~The method according to ~~any one of claims 40-42~~claim 40, wherein the competitive inhibition format is a fluorescence polarization assay.

44. (Currently Amended) ~~A~~The method according to ~~any one of claims 40 to 43~~claim 40, wherein the assay is conducted in a microtitre plate well.

45. (Currently Amended) An insecticidal compound identified by the assay according to ~~any one of claims 40 to 44~~claim 40.

46. (Currently Amended) An effector compound for ecdysone receptor gene switches, the compound identified by the assay according to ~~any one of claims 40 to 44~~claim 40.